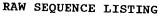#2 OIPE

```
           RAW SEQUENCE LISTING            DATE: 01/10/2002
           PATENT APPLICATION:  US/09/965,099    TIME: 09:26:42

           Input Set : N:\Crf3\RULE60\09965099.txt
           Output Set: N:\CRF3\01102002\I965099.raw

               SEQUENCE LISTING
    3 (1) GENERAL INFORMATION:
    5        (i) APPLICANT: Blackburn, Michael
    6                       Feuerstein, Giora
    7                       Patel, Arunbhai
    9       (ii) TITLE OF INVENTION: ANTICOAGULANT AGENTS USEFUL IN
   10                                TREATMENT OF THROMBOSIS
   12      (iii) NUMBER OF SEQUENCES: 111
   14       (iv) CORRESPONDENCE ADDRESS:
   15            (A) ADDRESSEE: SmithKline Beecham Corporation
   16            (B) STREET: 709 Swedeland Road
   17            (C) CITY: King of Prussia
   18            (D) STATE: PA
   19            (E) COUNTRY: USA
   20            (F) ZIP: 19406
   22        (v) COMPUTER READABLE FORM:
   23            (A) MEDIUM TYPE: Diskette
   24            (B) COMPUTER: IBM Compatible
   25            (C) OPERATING SYSTEM: DOS
   26            (D) SOFTWARE: FastSEQ Version 1.5
   28       (vi) CURRENT APPLICATION DATA:
C--> 29            (A) APPLICATION NUMBER: US/09/965,099
C--> 30            (B) FILING DATE: 26-Sep-2001
   31            (C) CLASSIFICATION:
   33      (vii) PRIOR APPLICATION DATA:
   34            (A) APPLICATION NUMBER: 09/346,487
   35            (B) FILING DATE:
   39     (viii) ATTORNEY/AGENT INFORMATION:
   40            (A) NAME: Baumeister, Kirk
   41            (B) REGISTRATION NUMBER: 33,833
   42            (C) REFERENCE/DOCKET NUMBER: P50438-1
   44       (ix) TELECOMMUNICATION INFORMATION:
   45            (A) TELEPHONE: 610-270-5096
   46            (B) TELEFAX:
   47            (C) TELEX:
   50 (2) INFORMATION FOR SEQ ID NO: 1:
   52        (i) SEQUENCE CHARACTERISTICS:
   53            (A) LENGTH: 20 base pairs
   54            (B) TYPE: nucleic acid
   55            (C) STRANDEDNESS: single
   56            (D) TOPOLOGY: linear
   58       (ii) MOLECULE TYPE: cDNA
   59      (iii) HYPOTHETICAL: NO
   60       (iv) ANTI-SENSE: NO
W--> 61        (v) FRAGMENT TYPE:
   62       (vi) ORIGINAL SOURCE:
   64       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/965,099

DATE: 01/10/2002
TIME: 09:26:42

Input Set : N:\Crf3\RULE60\09965099.txt
Output Set: N:\CRF3\01102002\I965099.raw

```
 66   CATCCTAGAG TCACCGAGGA                                              20
 68 (2) INFORMATION FOR SEQ ID NO: 2:
 70       (i) SEQUENCE CHARACTERISTICS:
 71            (A) LENGTH: 21 base pairs
 72            (B) TYPE: nucleic acid
 73            (C) STRANDEDNESS: single
 74            (D) TOPOLOGY: linear
 76      (ii) MOLECULE TYPE: cDNA
 77     (iii) HYPOTHETICAL: NO
 78      (iv) ANTI-SENSE: NO
 W--> 79       (v) FRAGMENT TYPE:
 80       (vi) ORIGINAL SOURCE:
 82       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
 84   AGCTGCCCAA AGTGCCCAAG C                                            21
 86 (2) INFORMATION FOR SEQ ID NO: 3:
 88       (i) SEQUENCE CHARACTERISTICS:
 89            (A) LENGTH: 36 base pairs
 90            (B) TYPE: nucleic acid
 91            (C) STRANDEDNESS: single
 92            (D) TOPOLOGY: linear
 94      (ii) MOLECULE TYPE: cDNA
 95     (iii) HYPOTHETICAL: NO
 96      (iv) ANTI-SENSE: NO
 W--> 97       (v) FRAGMENT TYPE:
 98      (vi) ORIGINAL SOURCE:
100      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
102   CTAACACTCA TTCCTGTTGA AGCTCTTGAC AATGGG                            36
104 (2) INFORMATION FOR SEQ ID NO: 4:
106       (i) SEQUENCE CHARACTERISTICS:
107            (A) LENGTH: 21 base pairs
108            (B) TYPE: nucleic acid
109            (C) STRANDEDNESS: single
110            (D) TOPOLOGY: linear
112      (ii) MOLECULE TYPE: cDNA
113     (iii) HYPOTHETICAL: NO
114      (iv) ANTI-SENSE: NO
 W--> 115      (v) FRAGMENT TYPE:
116      (vi) ORIGINAL SOURCE:
118      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
120   GATTTTCARG TGCAGATTTT C                                           21
122 (2) INFORMATION FOR SEQ ID NO: 5:
124       (i) SEQUENCE CHARACTERISTICS:
125            (A) LENGTH: 363 base pairs
126            (B) TYPE: nucleic acid
127            (C) STRANDEDNESS: single
128            (D) TOPOLOGY: linear
130      (ii) MOLECULE TYPE: cDNA
131     (iii) HYPOTHETICAL: NO
132      (iv) ANTI-SENSE: NO
```

RAW SEQUENCE LISTING   DATE: 01/10/2002
PATENT APPLICATION: US/09/965,099   TIME: 09:26:42

Input Set : N:\Crf3\RULE60\09965099.txt
Output Set: N:\CRF3\01102002\I965099.raw

```
W--> 133      (v) FRAGMENT TYPE:
     134     (vi) ORIGINAL SOURCE:
     136     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
     138  CAGATCCAGT TGGTGCAGTC TGGACCTGAG CTGAAGAAGC CTGGAGAGAC AGTCAAGATC    60
     139  TCCTGCAAGG CTTCTGGGTA CACCTTCACA AACTATGGAA TGAACTGGGT GAAGCAGGCT   120
     140  CCAGGAAAGG GTTTAAAGTG GATGGGCTGG ATAAACACCA GAAATGGAAA GTCAACATAT   180
     141  GTTGATGACT TCAAGGGACG GTTTGCCTTC TCTTTGGAAA GCTCTGCCAG CACTGCCAAT   240
     142  TTGCAGATCG ACAACCTCAA AGATGAGGAC ACGGCTACAT ATTTCTGTAC AAGAGAAGGG   300
     143  AATATGGATG GTTACTTCCC TTTTACTTAC TGGGGCCAAG GGACTCTGGT CACTGTCTCT   360
     144  GCA                                                                363
     146 (2) INFORMATION FOR SEQ ID NO: 6:
     148      (i) SEQUENCE CHARACTERISTICS:
     149          (A) LENGTH: 321 base pairs
     150          (B) TYPE: nucleic acid
     151          (C) STRANDEDNESS: single
     152          (D) TOPOLOGY: linear
     154     (ii) MOLECULE TYPE: cDNA
     155    (iii) HYPOTHETICAL: NO
     156     (iv) ANTI-SENSE: NO
W--> 157      (v) FRAGMENT TYPE:
     158     (vi) ORIGINAL SOURCE:
     160     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
     162  CAAATTGTTC TCTCCCAGTC TCCAGCAATC CTGTCTGCAT CTCCAGGGGA GAAGGTCACA    60
     163  ATGACTTGCA GGGCCAGCTC AAGTGTAAAT TACATGCACT GGTACCAGCA GAAGCCAGGA   120
     164  TCCTCCCCCA AACCCTGGAT TTATGCCACA TCCAACCTGG CTTCTGGAGT CCCTGCTCGC   180
     165  TTCAGTGGCA GTGGGTCTGG GACCTCTTAC TCTCTCACAA TCAGCAGAGT GGAGGCTGAA   240
     166  GATGCTGCCA CTTATTACTG CCAGCAGTGG AGTATTAACC CACGGACGTT CGGTGGAGGC   300
     167  ACCAAGCTGG AAATCAAACG G                                             321
     169 (2) INFORMATION FOR SEQ ID NO: 7:
     171      (i) SEQUENCE CHARACTERISTICS:
     172          (A) LENGTH: 121 amino acids
     173          (B) TYPE: amino acid
     174          (C) STRANDEDNESS: single
     175          (D) TOPOLOGY: linear
     177     (ii) MOLECULE TYPE: peptide
     178    (iii) HYPOTHETICAL: NO
     179     (iv) ANTI-SENSE: NO
     180      (v) FRAGMENT TYPE: internal
     181     (vi) ORIGINAL SOURCE:
     183     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
     185  Gln Ile Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
     186   1               5                  10                  15
     187  Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
     188              20                  25                  30
     189  Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
     190          35                  40                  45
     191  Gly Trp Ile Asn Thr Arg Asn Gly Lys Ser Thr Tyr Val Asp Asp Phe
     192      50                  55                  60
     193  Lys Gly Arg Phe Ala Phe Ser Leu Glu Ser Ser Ala Ser Thr Ala Asn
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/965,099

DATE: 01/10/2002
TIME: 09:26:42

Input Set : N:\Crf3\RULE60\09965099.txt
Output Set: N:\CRF3\01102002\I965099.raw

```
194   65                        70                    75                      80
195   Leu Gln Ile Asp Asn Leu Lys Asp Glu Asp Thr Ala Thr Tyr Phe Cys
196                        85                    90                      95
197   Thr Arg Glu Gly Asn Met Asp Gly Tyr Phe Pro Phe Thr Tyr Trp Gly
198                        100                   105                  110
199   Gln Gly Thr Leu Val Thr Val Ser Ala
200                        115                   120
202   (2) INFORMATION FOR SEQ ID NO: 8:
204        (i) SEQUENCE CHARACTERISTICS:
205             (A) LENGTH: 5 amino acids
206             (B) TYPE: amino acid
207             (C) STRANDEDNESS: single
208             (D) TOPOLOGY: linear
210       (ii) MOLECULE TYPE: peptide
211      (iii) HYPOTHETICAL: NO
212       (iv) ANTI-SENSE: NO
213        (v) FRAGMENT TYPE: internal
214       (vi) ORIGINAL SOURCE:
216       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
218   Asn Tyr Gly Met Asn
219    1                   5
221   (2) INFORMATION FOR SEQ ID NO: 9:
223        (i) SEQUENCE CHARACTERISTICS:
224             (A) LENGTH: 17 amino acids
225             (B) TYPE: amino acid
226             (C) STRANDEDNESS: single
227             (D) TOPOLOGY: linear
229       (ii) MOLECULE TYPE: peptide
230      (iii) HYPOTHETICAL: NO
231       (iv) ANTI-SENSE: NO
232        (v) FRAGMENT TYPE: internal
233       (vi) ORIGINAL SOURCE:
235       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
237   Trp Ile Asn Thr Arg Asn Gly Lys Ser Thr Tyr Val Asp Asp Phe Lys
238    1              5                   10                  15
239   Gly
242   (2) INFORMATION FOR SEQ ID NO: 10:
244        (i) SEQUENCE CHARACTERISTICS:
245             (A) LENGTH: 12 amino acids
246             (B) TYPE: amino acid
247             (C) STRANDEDNESS: single
248             (D) TOPOLOGY: linear
250       (ii) MOLECULE TYPE: peptide
251      (iii) HYPOTHETICAL: NO
252       (iv) ANTI-SENSE: NO
253        (v) FRAGMENT TYPE: internal
254       (vi) ORIGINAL SOURCE:
256       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
258   Glu Gly Asn Met Asp Gly Tyr Phe Pro Phe Thr Tyr
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/965,099

DATE: 01/10/2002
TIME: 09:26:42

Input Set : N:\Crf3\RULE60\09965099.txt
Output Set: N:\CRF3\01102002\I965099.raw

```
259   1                    5                        10
261 (2) INFORMATION FOR SEQ ID NO: 11:
263      (i) SEQUENCE CHARACTERISTICS:
264           (A) LENGTH: 107 amino acids
265           (B) TYPE: amino acid
266           (C) STRANDEDNESS: single
267           (D) TOPOLOGY: linear
269     (ii) MOLECULE TYPE: peptide
270    (iii) HYPOTHETICAL: NO
271     (iv) ANTI-SENSE: NO
272      (v) FRAGMENT TYPE: internal
273     (vi) ORIGINAL SOURCE:
275     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
277  Gln Ile Val Leu Ser Gln Ser Pro Ala Ile Leu Ser Ala Ser Pro Gly
278   1                   5                      10                      15
279  Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Asn Tyr Met
280           20                      25                      30
281  His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
282           35                      40                      45
283  Ala Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
284           50                      55                      60
285  Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Val Glu Ala Glu
286   65                  70                      75                      80
287  Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ile Asn Pro Arg Thr
288           85                      90                      95
289  Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
290           100                     105
292 (2) INFORMATION FOR SEQ ID NO: 12:
294      (i) SEQUENCE CHARACTERISTICS:
295           (A) LENGTH: 10 amino acids
296           (B) TYPE: amino acid
297           (C) STRANDEDNESS: single
298           (D) TOPOLOGY: linear
300     (ii) MOLECULE TYPE: peptide
301    (iii) HYPOTHETICAL: NO
302     (iv) ANTI-SENSE: NO
303      (v) FRAGMENT TYPE: internal
304     (vi) ORIGINAL SOURCE:
306     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
308  Arg Ala Ser Ser Ser Val Asn Tyr Met His
309   1                   5                      10
311 (2) INFORMATION FOR SEQ ID NO: 13:
313      (i) SEQUENCE CHARACTERISTICS:
314           (A) LENGTH: 7 amino acids
315           (B) TYPE: amino acid
316           (C) STRANDEDNESS: single
317           (D) TOPOLOGY: linear
319     (ii) MOLECULE TYPE: peptide
320    (iii) HYPOTHETICAL: NO
```
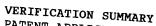
VERIFICATION SUMMARY
PATENT APPLICATION: US/09/965,099

DATE: 01/10/2002
TIME: 09:26:43

Input Set : N:\Crf3\RULE60\09965099.txt
Output Set: N:\CRF3\01102002\I965099.raw

```
L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:61 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=1
L:79 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=2
L:97 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=3
L:115 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=4
L:133 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=5
L:157 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=6
L:360 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=15
L:379 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=16
L:398 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=17
L:417 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=18
L:436 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=19
L:518 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=21
L:536 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=22
L:554 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=23
L:606 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=25
L:625 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=26
L:643 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=27
L:661 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=28
L:680 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=29
L:699 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=30
L:786 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=32
L:806 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=33
L:826 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=34
L:901 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=36
L:919 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=37
L:937 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=38
L:988 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=40
L:1006 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=41
L:1024 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=42
L:1042 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=43
L:1123 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=45
L:1143 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=46
L:1163 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=47
L:1232 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=49
L:1250 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=50
L:1268 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=51
L:1355 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=53
L:1374 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=54
L:1414 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=56
L:1495 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=58
L:1513 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=59
L:1550 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=61
L:1631 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=63
L:1651 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=64
L:1671 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=65
L:1746 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=67
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VERIFICATION SUMMARY
PATENT APPLICATION: US/09/965,099   DATE: 01/10/2002
                                        TIME: 09:26:43

Input Set : N:\Crf3\RULE60\09965099.txt
Output Set: N:\CRF3\01102002\I965099.raw

L:1764 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=68
L:1782 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=69
L:1820 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=71
L:1838 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=72